TM 9-4910-683-14&P

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS LIST)

FOR

LATHE, BRAKE
MODEL 1476
(STAR MACHINE & TOOL COMPANY)
(NSN 4910-01-028-9849)

HEADQUARTERS, DEPARTMENT OF THE ARMY

SEPTEMBER 1981

Technical Manual
No. 9-4910-683-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 25 *September 1981*

Operator's, Organizational, Direct Support
and General Support Maintenance Manual
(Including Repair Parts List)
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(NSN 4910-01-028-9849)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished direct to you.

NOTE

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom this lathe is issued.

Manufactured by: Star Machine & Tool Co.
201 6th Street Southeast
Minneapolis, Minnesota 55414

Procured under Contract No. DAAA09-78-C-4400

This technical manual is an authentication of the manufacturers' commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment,

INSTRUCTIONS FOR REQUISITIONING PARTS

NOT IDENTIFIED BY NSN

When requisitioning parts not identified by National Stock Number, it is mandatory that the following information be furnished the supply officer.

1 - Manufacturer's Federal Supply Code Number - 57127

2 - Manufacturer's Part Number exactly as listed herein.

3 - Nomenclature exactly as listed herein, including dimensions, if necessary.

4 - Manufacturer's Model Number - Model 1476

5 - Manufacturer's Serial Number (End Item)

6 - Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.

7 - If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

(a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number - 57127 followed by a colon and manufacturer's Part Number for the repair part.

(b) Complete Remarks field as follows:

Noun: (nomenclature of repair part)
For: NSN: 4910-01-028-9849
Manufacturer: Star Machine & Tool Co.
201 6th Street Southeast
Minneapolis, MN 55414
Model: 1476
Serial : (of end item)

Any other pertinent Information such as Frame Number, Type, Dimensions, etc.

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SECTION I

USE AND MAINTENANCE

1-1. INTRODUCTION

1-2. The disc and drum brake lathe, Model 1476, is engineered to give years of precision, trouble free performance, as well as keeping maintenance expenses at a minimum and operating efficiency at a maximum. The few minutes required to read this manual will assure this kind of performance.

1-3. The Model 1476 Disc and Drum Brake Lathe is designed to resurface American and foreign car discs and drums, as well as being capable of resurfacing discs and drums on light to heavy duty trucks.

1-4. Numbers in parenthesis, as in the following paragraphs, refer to the item numbers. (See Figure 2-1).

1-5. TABLE OF SPECIFICATIONS

Refacing Method		Two sides simultaneously
Disc Capacity Range:	Diameter	3" to 24 1/2"
	Thickness	1/8" to 2 1/4"
Drum Capacity Range:	Diameter	6" to 45°
	Depth	9"
Carriage Travel		9“
Carriage Feeds:	Rough Cut	015"/Rev.
	Finish Cut	005” /Rev.
Cross Slide Travel		7 1/4”
Cross Slide Feed:		Infinitely Variable O to 3 1/2” /min.
Tool Bit Adjustment		.001” increments
Tool Plate		Combination Switch- O- Matic
Spindle Speeds		...30, 60, 125RPM
Vibration Dampener (Disc)		Built-In
Boring Bar		Self-Indexing
Swing		60"
Dimensions		Length 28”, Width 23" Height 43 1/2"
Motor		1 HP, 115/230 V , 60 Hz., 1 Ph, 1725 RPM
Shipping Weight		...587 lbs.

1-6. INSTALLATION

1-7. Remove machine and all accessories from shipping container.

1-8. Check all parts with packing slip to ensure all items are included.

1-9. Clean all machined surfaces of the machine, accessories and adapters that are covered with a protective coating.

1-10. Place machine in desired location. Level machine by removing Tool Plate {128) and placing precision level on top of Cross Slide (102). Place shims under base corners until machine is level and securely bolt machine to floor. Replace Tool Plate (128).

1-11. Place R-741 Arbor into Spindle (8) making sure that the mating surfaces are clean and covered with a light film of oil. Rotate Draw Bar Nut (126) clockwise and tighten to 60 ft./lbs. of torque with R-154 Open End Wrench.

1-12. Place CB-35 Tool Bit into Boring Bar (146) and fasten securely with the two Square Head Set Screws (147). The tool bit slot in the head of the Boring Bar (146) is deep enough to allow several degrees adjustment of tool bit angle.

1-13. Loosen Hex Head Cap Screw (150) and extend Boring Bar (146) approximately five inches. Tighten Hex Head Cap Screw (150).

1-14. Place CB-6 Tool Bit into Left Holder (133) and CB-12 Tool Bit into Right Holder (132). Tighten both Square Head Set Screws (138) and the two Socket Set Screws (139). Tool bits should be in the same relative position. The tool bit slots are deep enough to allow several degrees adjustment of tool bit angle.

1-15. Insert Vibration Dampener Assembly (151) into hole in Right Holder (132) and place shank of Tension Spring (155) against lowest thread on left hand side of Square Head Set Screw (138). Rotate Vibration Dampener Assembly (151) clockwise until Rod (153) passes over Square Head Set Screw (138). Push Vibration Dampener Assembly (151) down so it rests on Right Holder (132) against right hand side of Square Set Screw (138).

1-16. Deactivate Vibration Dampener Assembly (151) by rotating clockwise 1/8" turn to a point where the Block (152) can be pushed down and retained behind the Right Holder (132).

1-17. Insert two socket head screw keys into the two socket head capscrews (137) and the long shank of the socket head screw key into the left socket setscrew (139). Leave keys in their respective socket setscrews when machining to prevent chip accumulation in sockets.

1-18. Position Lamp (254) over Lamp Bracket (253) and plug into grounded Receptacle (206). Use a standard bulb of 75 watts or less.

1-19. OPERATIONAL PROCEDURES

1-20. Operation of Tool Plate (128). To position Tool Plate (128) for either drum turning or disc refacing, loosen Hex Head Cap Screw (150). Slide Boring Bar (146) in or out, depending on desired Tool Plate (128) position. Rotate Tool Plate (128) to desired position. It might be necessary to crank out the Cross Slide (102) to provide clearance for the Boring Bar (146) end. When positioning Tool Plate (128) for rotor refacing, visually align the Tool Plate (128) edge with top of End Plate (112).

1-21. Mounting Drums and Discs on Arbor. Mount Drums or Discs on arbor using one of the following methods which apply:

a. Tapered Bearing Equipped Hub: Select the proper Centering Cones to fit into the inner and outer bearing cups. In certain applications where the bearing cup is recessed deeply, it is proper for the Centering Cone to center into the hub. Place Centering Cone for inner bearing cup on arbor, followed by hub and Centering Cone for outer bearing cup. Place R-540 Spacers on arbor, the R-745 Arbor Nut. Tighten Arbor Nut with the R-154 Open End Wrench.

b. Ball Bearing Equipped Hub: Follow instructions for tapered bearing equipped hub.

c. Loose Drum or Disc: Select Centering Cone to fit into center of drum. Place one R-655 Face Plate on R-741 Arbor followed by the R-675 Spring and Centering Cone. Place drum or disc on Arbor over Centering Cone and push drum up to pads of R-655 Face Plate. Place other R-655 Face Plate on Arbor and push against drum or disc. Place R-540 Spacers on Arbor so that the two Face Plates can hold the drum or disc secure when the Arbor Nut is tightened.

Make sure that the Face Plate Pads are riding on a smooth clean surface of the drum. If burrs exist around the edges of the bolt holes, place the notches of the Face Plate over the burrs. This will help as sure precise machining. Note: On exceptionally small drums and discs, it is sometimes necessary that only one Face Plate be used, in order for Tool Bit to have sufficient working clearance.

d. Tapered Hub: Select the proper Centering Cones to fit into hub. On some hubs the Centering Cones go in only about 1/16 of an inch. Place Centering Cones for inside of tapered hub onto Arbor, followed by the drum and outside Tapered Cone. Place additional R-540 Spacers onto Arbor so that when the Arbor Nut is tightened, the two Centering Cones are drawn tightly against the tapered hub.

1-22. Machining Brake Drums: Mount drum on Arbor using one of the methods that is described in Paragraph 1-21. Place Brake Drum Silencing Band SB-10 around drum and apply enough tension so that the drum is snugly wrapped. On passenger car drums, the Brake Drum Silencing Band should be positioned along the edge of the open side of the drum.

1-23. The Boring Bar (146), Tool Plate (128), and Cross Slide (102), should be adjusted so that the Tool Bit can be placed into the rear of the drum without interference. These adjustments depend on diameter and depth of the drum. The Boring Bar (146) can be slid in and out of the Tool Plate (128) by loosening the Cap Screw (150). The Tool Plate (128) can be rotated by loosening Cap Screw (150), and the Cross Slide (102) can be moved in or out by rotating Handle (118).

1-24. The spindle speed is selected by the following procedure: Switch off Motor (208) at Switch (201).

1-25. Loosen Hand Knob (236) on side of base and give it two full turns counterclockwise.

1-26. Raise Hand Knob (236) to highest position and retighten Hand Knob.

1-27. Loosen clasp on side of Guard (239) and swing open Back Guard (241). Move V Belt (500154) to proper grooves in Step Pulleys (29) and (224).

1-28. Loosen Hand Knob (236) and lower to original position.

1-29. Retighten Hand Knob (236) firmly using moderate downward pressure.

1-30. Close Back Guard (241) and secure clasp.

1-31. Turn machine on at Switch (201).

1-32. By rotating Handwheel (243) clockwise and Handle (118) counterclockwise, position Tool Bit against drum surface 1/2 inch from outer edge. Engage Shifter Lever Assembly (71) to the rough cut position in order to remove the outer ridge. If outer ridge is abnormally high, two or more passes may be necessary.

1-33. Bring Tool Bit to rear of drum by turning Handwheel (243) clockwise and remove inner ridge.

1-34. Set Tool Bit to desired depth of cut and tighten Thumb Screw (100) to lock Cross Slide (102). Depth of cut is set by rotating Handle (118) counterclockwise. A typical rough cut is .006° to .010” deep. Each graduation on the Graduated Collar (115) represents .001”.

1-35. Place the Shifter Lever Assembly to the Rough Cut position.

1-36. When the Tool Bit leaves the drum, move the Shifter Lever Assembly to the neutral position. If the drum does not clean up, repeat the above procedures.

1-37. Note Rough Cut Setting on Graduated Collar (115), loosen Thumb Screw (100) and rotate Handle (118) clockwise .015".

1-38. Rotate Handwheel (243) until Tool Bit reaches back of drum.

1-39. Rotate Handle (118) counterclockwise and set Tool Bit .003” deeper than rough cut setting.

1-40. Tighten Thumbscrew (100) to lock Cross Slide (102).
1-41. Engage the Shifter Lever Assembly (71) to the Finish Cut position.
1-42. When Tool Bit leaves the drum, the drum should have an accurate and smooth finish.
1-43. Place Shifter Lever Assembly (71) in the neutral position and turn off Switch (201).
1-44. The above procedures are for instruction purposes and are not necessarily correct for all cases. Drum condition determines the proper depth of cut, carriage feed, and spindle RPM. As the operator gains experience with his machine, he will be able to make the proper settings for maximum performance, efficiency and accuracy.
1-45. Machining Disc Brake Rotors. Rotate cross slide crank Handle (118) counterclockwise to position Tool Plate (128) away from arbor so sufficient clearance is provided when mounting rotor.
1-46. Mount rotor on Arbor using one of the methods that is described in Paragraph 1-21.
1-47. Position Tool Plate (128) notch over rotor by rotating Handwheel (243), Handle (118), and Graduated Dials (144) until the Tool Bit cutting tips are approximately 1/2" past rust ridge on outside edge of rotor.
1-48. Tighten Thumb Screw (101) to lock Apron (92).
1-49. Select low spindle RPM for rough cut as described in Paragraph 1-24 through 1-30.
1-50. Loosen the two Sot. Hd. Cap Screws (137) and retighten to a point where a slight drag is felt when adjusting Graduated Dials (144). This drag is caused by the Sot. Hd. Cap Screws (137) maintaining pressure against the Holders (133) and (132). Always maintain this drag when adjusting Tool Bits for depth of cut. Rotate both Graduated Dials (144) clockwise until Tool Bits contact rotor.
1-51. Position Vibration Dampener Assembly (151) against rotor. Tighten Sot. Hd. Cap Screws (137).
1-52. Rotate Handle (118) counterclockwise until rust ridge is removed.
1-53. Rotate Handle (118) clockwise until Tool Bits have removed inner rust ridge. Then position Handle (118) in a vertical position. CAUTION: Be sure Vibration Dampener Assembly (151) does not catch on edge of rotor when cranking in Tool Bits.
1-54. Loosen Sot. Hd. Cap Screws (137) and rotate both Graduated Dials (144) clockwise 005" and retighten Sot. Hd. Cap Screws (137).
1-55. Mount Drive Unit Assembly by placing Drive Unit Mount (156) pin into Plate (112) receptacle.
1-56. Insert Cord and Plug (172) into grounded Receptacle (206) in back of Cabinet (195).
1-57. Switch on Drive Unit at Switch (173).
1-58. Place Feed Control Handle in the middle of the Rough Cut Range (188). See locking instructions on end of Feed Control Handle Knob. Swing Drive Unit clockwise until Coupling (183) contacts Handle (118). When the Coupling (183) notch aligns and connects with Handle (118), pull the Feed Control Handle to the neutral position. Place latch hook over Spring Pin (114) and secure latch.
1-59. Place Feed Control Handle in middle of the Rough Cut Range (188).
1-60. When Tool Bits leave rotor, pull Feed Control Handle to the neutral position and switch off lathe at Switch (201).
1-61. Disengage latch from Spring Pin (114) and swing Drive Unit counterclockwise.
1-62. Deactivate Vibration Dampener Assembly (151).
1-63. If rotor braking surface is not cleaned up, repeat steps 1-54 through 1-62.
1-64. Rotate Handle (118) to position Tool Bits at beginning of previous cut and loosen Socket Head Cap Screws (137).
1-65. Place Vibration Dampener Assembly (151) against rotor.

1-66. Switch on lathe at Switch (201).
1-67. Rotate Graduated Dials (144) clockwise .003" and tighten Sot. Hd. Cap. Screws (137).
1-68. Repeat steps 1-58 and then place Feed Control Handle in the top half of the Finish Cut Range (188).
1-69. When the Tool Bits leave the rotor, the rotor should have a smooth and accurate finish.
1-70. Switch off Drive Unit at Switch (173).
1-71. Switch off lathe at Switch (201).
1-72. The above procedure is for instruction purposes and is not necessarily correct in all cases. Rotor condition determines proper depth of cut, spindle RPM and cross slide feed. As the operator gains experience with his machine, he will be able to make the proper settings for maximum performance, efficiency and accuracy.

1-73. MAINTENANCE PROCEDURES

1-74. Lubrication

a. Main bearings (3) and (4). Apply a few drops of SAE #10 oil in both Head Oilers (5) daily.
b, Lead Screw (86) and Lead Screw Nut (88). Apply a few drops of SAE #10 oil daily in Oiler (84).
c. Cross Slide (102). Apply a few drops of SAE #10 oil on Cross Slide Screw (106) and between Graduated Collar (115) and Plate (112) daily.

d. Gear Box. Maintain the oil level in the center of End Oil Window (33) with SAE #90 gear oil. Add oil by removing Vented Plug (6). CAUTION: Do not fill higher than top of oil Window (33). Drain oil every 500 running hours by removing Drain Plug (7).
e. Apron Ways. Move Apron (92) to extreme out position, wipe away all dirt or cutting particles and apply several drops of SAE #10 oil to all exposed surfaces of the dovetail ways. Move Apron (92) in opposite direction and repeat above procedures. Perform weekly.
f. Cross Slide Ways. Back out Cross Slide (102) to extreme out position and wipe the dovetail surface clean and apply SAE #10 oil weekly.
Wipe machine free of dust and cutting particles with oil rag daily.

1-75 Tooling. The CB-6 and CB-12 Tool Bits have disposable cutting tips. Loosen the slotted screw and rotate to the next cutting edge when necessary. When all three edges are worn, flip cutting tip over and repeat procedure on next three cutting edges. When all edges are worn, discard cutting tips and replace.
1-76. The CB-35 Tool Bit has a carbide cutting tip that is sharpened to a 1/32 inch radius with a 6 degree clearance angle.

1-77. TROUBLESHOOTING

a. Problem: Drum or disc chatter.
Reason:
- Wrong adapters.
- Dull Tool Bit.
- Failure to use drum Silencing Band SB-10 or disc Dampener Assembly (151).
- Improper use of drum Silencing Band SB-10.
- Incorrect spindle speed.
- Areas to be checked for tightness.
(1) Tool Bit.
(2) Tool Bit Holders (132 & 133).
(3) Boring Bar (146).
(4) Cross Slide Gib (103). To adjust, see Paragraph 1-78b.
(5) Apron Gib (94). To adjust, see Paragraph 1-78a.
(6) Arbor.
(7) Arbor Nut.
(8) Tool Plate (128).
(9) Cross Slide Thumb Screw (100), when machining drums.
(10) Apron Thumb Screw (101) when machining discs.
(11) Drum to hub mounting.
(12) Excessive spindle to bearing clearance (sideplay).
(13) Spindle end play.

b. Problem: Arbor runout (wobble).
Reason:
- Without mounted drum.
(1) Dirt between arbor taper and Spindle (8) taper.
(2) Bent arbor.
- With mounted drum.
(1) Dirt between adapter and bearing cup.
(2) Dirt or burr between faceplate and drum.
(3) Dirt between spacer and adapter.
(4) Bearing cups not seated in hub.

c. Problem: Cross Slide Screw (106) binding.
Reason:
- Dovetail ways dirty.
- End Plate (112) misalined.
- Gib Screws (104) too tight. To adjust, see Paragraph 1-78b.
- Needs lubrication.

d. Problem: Machines drum eccentrically.
Reason:
- Drum mounted improperly.
- Bent hub or drum.
- Wrong adapters being used.
- Defective adapter.

e. Problem: Arbor cannot be tightened into Spindle (8).
Reason:
- Threads dirty.
- Threads damaged.

f. Problem: Graduated Dial (144) does not stay in adjustment.
Reason:
Sot. Set Screw (143) located in front of Dial Block (140) needs tightening.

g. Problem: Unable to set machine for small diameter drums.
Reason:
Boring Bar (146) positioned improperly.
Failure to use R-540 spacers to position drum away from Housing (2).

h. Problem: Power loss.
Reason:
Low voltage.
Spindle RPM too fast for depth of cut.
Worn belts (223), (227).
Tool Bit set too deep.
Dull Tool Bit,
Insufficient lubrication in Housing Assembly (1) gear case.
Spindle Bearings (3 & 4) dry.
Defective motor.

i. Problem: Machine shuts off during operation.
Reason:
Automatic Thermal Overload Protector cuts off because machine is overworked.
Shut off Switch (201) and let Motor (208) cool for 6 minutes before restarting.
Fuze blown.

j. Problem: Machine will not start.
Reason:
Fuze blown.
Defective Switch (201).

k. Problem: Feed Control inoperative.
Reason:
Feed Gear Spring Pin (91) sheared.
Drive Chain (61) broken.
Lead Screw Nut (88) stripped.

l. Problem: Cannot engage Lever (71).
Reason:
Cut off Bracket (97) has disengaged feed. Rotate Handwheel (243) clockwise until Cut off Bracket (97) has adequately cleared Lever (71).

1-78. ADJUSTMENTS

a. Apron Gib (94) adjustment. Loosen Jam Nuts (96). Tighten set screws (95) until Apron looseness is taken up. Tighten Jam Nuts (96).

b. Cross Slide Gib (103) adjustment. Loosen Jam Nut (105). Tighten Gib Screws (104) until Cross Slide (102) looseness is taken up. Tighten Jam Nuts (105).

c. V Belt (223). Loosen the four Hex. Hd. Cap Screws (210), slide motor until proper belt tension is attained and tighten the four Hex. Hd. Cap Screws.

1-79. DISASSEMBLY

1-80. Remove Arbor by rotating Draw Bar Nut (126) counterclockwise with Open End Wrench R-154 until Arbor breaks free of Spindle.

PARTS LIST FOR MODEL 1476 DISC AND DRUM BRAKE LATHE

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
1.	100459		HOUSING ASSEMBLY		1
2.		300119	HOUSING	1	1
3.		150005	BEARING, MAIN FRONT	1	1
4.		150006	BEARING, MAIN REAR	1	1
			END HOUSING ASSEMBLY		
5.		230015	OILER, HEAD	2	2
6		230084	PLUG, VENTED	1	1
7.			PLUG, DRAIN, 1/4 - 18 SQ. HD.	1	1
8.		600101	SPINDLE	1	1
9.			SCREW, SET, SOC., 1/4 - 20 X 5/16	1	3
10.		990024	RING, O	1	1
11.		650006	SPACER, SPINDLE	1	1
12.		500134	GEAR, WORM	1	1
13.		350001	KEY, GEAR	1	2
14.		990013	WASHER, LOCK	1	1
15.		700005	NUT	1	1
16.		150012	CUP, BEARING	1	2
17.	100145		SHAFT ASSEMBLY		1
18.		600100	SHAFT, DRIVE	1	1
19.		500006	WORM	1	1
20.		350003	KEY, SHAFT, DRIVE	1	1
21.		150007	CONE, BEARING	2	2
			END SHAFT ASSEMBLY		
22.	100029		BEARING RETAINER ASSEMBLY		1
23.		300008	RETAINER, BEARING	1	1
24		250002	SEAL, OIL	1	1
25.		150012	CUP, BEARING	1	2
			END BEARING RETAINER ASSEMBLY		
26.		250029	SHIM, .010"	2	2
27.		250030	SHIM, .005"	1	1
28.			SCREW, CAP, SOC. HD., 1/4 - 20 X 3/4	4	10
29.		500155	PULLEY, STEP	1	2
30.			SCREW, SET, SOC., 5/16 - 18 X 3/8	1	3
31.		350036	KEY, PULLEY	1	2
32.		990021	PLUG	1	1
33.		990019	WINDOW, OIL	1	1
34.		250001	GASKET, COVER	1	1
35.	100136		COVER ASSEMBLY		1
36.		170116	COVER, HOUSING	1	1
37.		250003	SEAL	1	1
			END COVER ASSEMBLY		
38.			SCREW, CAP, SOC. HD., 1/4 - 20 X 3/4	6	10
39.		500004	SPROCKET, DRIVE	1	1
40.		650005	SPACER, STEEL	2	2
41.			WASHER, FLAT, 9/32 I.D. X 5/8 O.D.	2	3

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
42.			WASHER, LOCK, 1/4 MED.	2	12
43.			SCREW, CAP, SOC. HD., 1/4 - 20 X 1 1/4	2	6
44.	100050		CHAIN TIGHTENER ASSEMBLY		1
45.		130107	PLATE	1	1
46.		500002	SPROCKET	1	1
47.		150002	BUSHING	1	1
48.			WASHER, FLAT, 9/32 I.D. X 5/8 O.D.	1	3
			END CHAIN TIGHTENER ASSEMBLY		
49.	100362		CHAIN TIGHTENER PIN ASSEMBLY		1
50.		450354	PIN, BAR, TIGHTENER, CHAIN	1	1
51.		650230	RETAINING RING	1	1
			END CHAIN TIGHTENER PIN ASSEMBLY		
52		600003	SHAFT	1	1
53.		650011	RETAINING RING	2	2
54.	100040		SPROCKET & GEAR ASSEMBLY		1
55.		500009	SPROCKET	1	1
56.		500007	GEAR	1	1
57.			STUD, RD. HD., #10 X 1/2	3	3
58.		500008	GEAR	1	1
59.		450040	SPRING PIN	2	3
60.		150008	BUSHING	2	4
			END SPROCKET & GEAR ASSEMBLY		
61.		500158	CHAIN	1	1
62.		600004	SHAFT	1	1
63.	100048		INTERMEDIATE GEAR ASSEMBLY		1
64.		500021	GEAR	1	1
65.		500022	GEAR	1	1
66.		150008	BUSHING	2	4
67.		450040	SPRING PIN	1	3
			END INTERMEDIATE GEAR ASSEMBLY		
68.		150079	BALL	1	1
69.		750102	SPRING	1	1
70.			SCREW, SET, SOC., 1/4 - 20 X 3/16	1	1
71.	100342		SHIFTER LEVER ASSEMBLY		1
72.		370094	LEVER	1	1
73.		450038	PIN	1	1
			END SHIFTER LEVER ASSEMBLY		
74.		130434	BRACKET, SHIFTER	1	1
75.			SCREW, CAP, SOC. HD., 1/4 - 20 X 7/8	1	1
76.			WASHER, LOCK, 1/4 MED.	1	12
77.			NUT, JAM, HEX., 1/4 - 20	1	9
78.			WASHER, LOCK, 1/4 MED.	2	12
79.			SCREW, CAP, SOC. HD., 1/4 - 20 X 5/8	2	3
80.		370013	KNOB	1	1

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
81.		150013	COLLAR	1	1
82.		650209	SPACER, BUSHING	1	1
83.		150010	BUSHING, FLANGED	2	2
84.		230017	OILER	1	1
85.		250071	SEAL, DUST	1	1
86.		700249	SCREW, LEAD	1	1
87.		650319	RETAINING RING	1	1
88.		700006	NUT, SCREW, LEAD	1	1
89.		650008	SPACER	1	1
90.		500010	GEAR	1	1
91.		450042	SPRING PIN	1	1
92.		300117	APRON	1	1
93.			NUT, JAM, HEX., 1/2 - 13	1	1
94.		130381	GIB	1	1
95.		700242	SCREW, GIB	3	3
96.			NUT, JAM, HEX., 1/4 - 20	3	9
97.		370073	BRACKET, CUT OFF	1	1
98.		700256	SCREW, BRACKET	2	2
99.		990140	PLUG, NYLON	1	3
100.			SCREW, THUMB, 1/4 - 20 X 1 1/2	1	1
101.		700015	SCREW, THUMB	1	1
102.		300118	CROSS SLIDE	1	1
103.		130536	GIB	1	1
104.		700199	SCREW, GIB	5	5
105.			NUT, JAM, HEX., 1/4 - 20	5	9
106.		700287	SCREW, CROSS SLIDE	1	1
107.		650337	WASHER	1	1
108.			WASHER, LOCK, 1/4 MED.	1	12
109.			SCREW, CAP, SOC. HD., 1/4 - 20 X 5/8	1	3
110.		150087	BEARING, THRUST	2	2
111.		150088	RACE, THRUST	4	4
112.	100441		END PLATE WELDMENT	1	1
113.			SCREW, CAP, SOC. HD., 1/4 - 20 X 1/2	4	6
114.		450060	SPRING PIN	1	1
115.		650250	COLLAR, GRADUATED	1	1
116.		990144	PLUG, NYLON, COLLAR	1	1
117.			SCREW, SET, SOC., 8-32 X 1/4	1	1
118.		370138	HANDLE	1	1
119.		450359	SPRING PIN	1	1
120.		990474	COVER, CHIP	1	1
123.		150107	RACE, THRUST	1	1
124.		150106	BEARING, THRUST	1	1
125.		700257	DRAW BAR	1	1
126.		700254	NUT, DRAW BAR	1	1
127.		450373	SPRING PIN	1	1

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
128.	100456		TOOL PLATE ASSEMBLY		1
129.		130535	PLATE, TOOL	1	1
130.		450345	PIN, DOWEL	1	1
131.		450279	PIN, PIVOT	2	2
132.		990388	HOLDER, RIGHT	1	1
133.		990389	HOLDER, LEFT	1	1
134.		750037	SPRING	1	1
135.		450196	PIN	1	1
136.			WASHER, FLAT, 3/8 I.D. X 7/8 O.D.	4	16
137.			SCREW, CAP, SOC. HD., 3/8 - 16 X 2"	2	2
138.			SCREW, SET, SQ. HD., 3/8 - 16 X 5/8	2	6
139.			SCREW, SET, SOC., 1/4 - 20 X 5/16	2	3
140.		130447	BLOCK, DIAL	2	2
141.		450063	PIN	2	2
142.		990140	PLUG, NYLON	2	3
143.			SCREW, SET, SOC., 1/4 - 20 X 1/4	2	3
144.	100457		GRADUATED DIAL	2	2
145.			SCREW, CAP, SOC. HD., 1/4 - 20 X 1 1/4	4	6
			END TOOL PLATE ASSEMBLY		
146.		900326	BAR, BORING	1	1
147.			SCREW, SET, SQ. HD., 3/8 - 16 X 5/8	4	6
148.		800152	CLAMP	1	1
149.		650200	WASHER, CLAMP	1	1
150.			SCREW, CAP, HEX. HD., 1/2 - 13 X 3 3/4	1	1
151.	100438		VIBRATION DAMPENER ASSEMBLY		1
152.		990392	BLOCK	1	1
153.		990393	ROD	1	1
154.		450039	SPRING PIN	1	1
			END VIBRATION DAMPENER ASSEMBLY		
155.		750065	SPRING, TENSION	1	1
156.	100070		DRIVE UNIT MOUNT	1	1
157.		370064	BOX, CONTROL	1	1
158.		650177	SPACER	4	4
159.			WASHER, LOCK, SHAKEPROOF, 1/4"	4	4
160.			SCREW, MACH., FIL. HD., 1/4 - 20 X 1 1/4	4	4
161.		400092	OVER LOAD COUPLING	1	1
162.		500052	REDUCER, SPEED	1	1
163.		130446	ANGLE	1	1
164.			SCREW, MACH., RD. HD., 10-24 X 1 3/4	1	1
165.			WASHER, LOCK, SHAKEPROOF, #10	1	1
166.			NUT, HEX., 10-24	1	2
167.		750046	SPRING	1	1
168.			SCREW, MACH., RD. HD., 10-24 X 1 5/8	1	1
169.			WASHER, FLAT, 7/32 I.D. X 1/2 O.D.	2	2
170.			NUT, HEX., 10-24	1	2

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
171.		200082	MOTOR, 1/6 HP	1	1
172.		200001	CORD AND PLUG	1	1
173.		200084	SWITCH	1	1
174.			WASHER, FLAT, 3/8 I.D. X 7/8 O.D.	4	16
175.			WASHER, FLAT, 1/4 I.D. X 9/16 O.D.	4	4
176.			WASHER, LOCK, 1/4 MED.	4	12
177.			SCREW, CAP, HEX., HD., 1/4 - 20 X 1/2	4	6
178.		500013	PULLEY, MOTOR	1	1
179.			SCREW, SET, SOC., 5/16 - 18 X 5/16	1	2
180.		500014	PULLEY, BOX	1	1
181.			SCREW, SET, SOC., 5/16 - 18 X 7/16	1	1
182.		500162	BELT, V	1	1
183.		370127	COUPLING	1	1
184.			SCREW, SET, SOC., 1/4 - 20 X 1/4	1	3
185.		170121	GUARD	1	1
186.			SCREW, MACH., FIL.HD., 10-32 X 3/8	2	2
187.			SCREW, MACH., RD. HD., 8-32 X 1/4	1	1
188.		990113	DECAL, FINISH AND ROUGH CUT	1	1
189.		990056	DECAL	1	1
190.	100142		HANGER BRACKET WELDMENT	1	1
191.			WASHER, LOCK, 1/4 MED.	2	12
192.			SCREW, CAP, SOC. HD., 1/4 - 20 X 1/2	2	6
193.			SCREW, CAP, SOC. HD., 3/8 - 16 X 1"	4	4
194.			WASHER, LOCK, 3/8 MED.	4	12
195.	100458		CABINET WELDMENT	1	1
196.		200042	CONNECTOR, SCREW	1	1
197.		200071	CLIP, CORD	1	1
198.		200070	CLIP, WIRE	1	1
199.			SCREW, MACH., RD.HD., 10-24 X 1/4	1	8
200.		200074	BUSHING	1	1
201.		200059	SWITCH	1	1
202.		200060	HEATER COIL	1	1
203.			SCREW, MACH., RD.HD., 1/4 - 20 X 5/16	2	2
204.			SCREW, MACH., RD.HD., 10-24 X 1/4	1	8
205.		200031	CORD, POWER	1	1
206.		200006	RECEPTACLE	2	2
207.			SCREW, MACH., RD.HD., 10-24 X 7/16	4	4
208.		200063	MOTOR	1	1
209.	850097		MOTOR MOUNT WELDMENT	1	1
210.			SCREW, CAP, HEX. HD., 5/16 - 18 X 3/4	4	4
211.			WASHER, LOCK, 5/16 MED.	4	4
212.			WASHER, FLAT, 3/8 I.D. X 7/8 O.D.	4	16
213.		500156	PULLEY, MOTOR	1	1
214.			SCREW, SET, SOC., 5/16 - 18 X 3/8	1	3
215.		350025	KEY, PULLEY, MOTOR	1	1

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
216.		150102	BEARING, PILLOW BLOCK	2	2
217.			WASHER, LOCK, 3/8 MED.	4	12
218.			SCREW, CAP, HEX.HD., 3/8 - 16 X 1/2	4	8
219.		600099	SHAFT, PULLEY	1	1
220.		500157	PULLEY, LARGE	1	1
221.			SCREW, SET, SOC., 5/16 - 18 X 5/16	1	2
222.		350001	KEY, GEAR	1	2
223.		500153	BELT, V , 26"	1	1
224.		500155	PULLEY, STEP	1	2
225.			SCREW, SET, SOC., 5/16 - 18 X 3/8	1	3
226.		350036	KEY, PULLEY	1	2
227.		500154	BELT, V , 43"	1	1
228.		150091	BEARING, PILLOW BLOCK	2	2
229.			WASHER, FLAT, 3/8 I.D. X 7/8 O.D.	4	16
230.			WASHER, LOCK, 3/8 MED.	4	12
231.			SCREW, CAP, HEX. HD., 3/8 - 16 X 1/2	4	8
232.		130438	PLATE, SERRATED	1	1
233.			SCREW, MACH., FLAT HD., 10 - 24 X 5/16	4	4
234.		650178	SPACER	1	1
235.		700250	WASHER, SHAKEPROOF	1	1
236.	100139		HAND KNOB ASSEMBLY	1	1
237.		170140	COVER, LOUVERED	1	1
238.			SCREW, MACH., RD.HD., 10 - 24 X 5/16	8	8
239.		170117	GUARD	1	1
240.			SCREW, MACH., RD.HD., 10 - 24 X 1/4	3	8
241.		170119	GUARD, BACK	1	1
242.			SCREW, MACH., RD. HD., 10 - 24 X 1/4	3	8
243.	100429		HANDWHEEL ASSEMBLY	1	1
244.		450364	SPRING PIN, SHEAR	1	1
245.		990377	PLATE, FEED SELECTOR	1	1
246.			SCREW, TAPPING, PAN HD., #6 X 1/4	2	4
247.		990374	PLATE, SPINDLE, SPEED CONTROL	1	1
248.			SCREW, TAPPING, PAN HD., #6 X 1/4	2	4
249.		990378	PLATE, OIL	1	1
250.			SCREW, DRIVE # 2 X 1/4	2	4
251.		990018	PLATE, NAME	1	1
252.			SCREW, DRIVE, #2 X 1/4	2	4
253.		200036	BRACKET, LAMP	1	1
254.		200004	LAMP	1	1
255.					

ITEM NO.	ASSY NO.	PART NO.	DESCRIPTION	QUAN. PER ASSY	QUAN. PER MACH.
275.		130399	BRACKET, MOUNTING	1	1
276.			SCREW, CAP, HEX. HD., 1/4 - 20 X 1/2	2	6
277.			WASHER, LOCK, SHAKEPROOF, 3/8"	1	1
278.			NUT, JAM, HEX., 3/8 - 16	1	1
280.	100460		VIBRATION ELIMINATOR, CABINET ASSEMBLY		
281.		400096	CLEVIS	1	1
282.			NUT, JAM, HEX., 3/8 - 24	1	1
283.		390151	ROD	1	1
			END VIBRATION ELIMINATOR, CABINET ASSEMBLY		
284.		990029	PAD, WEAR	1	1

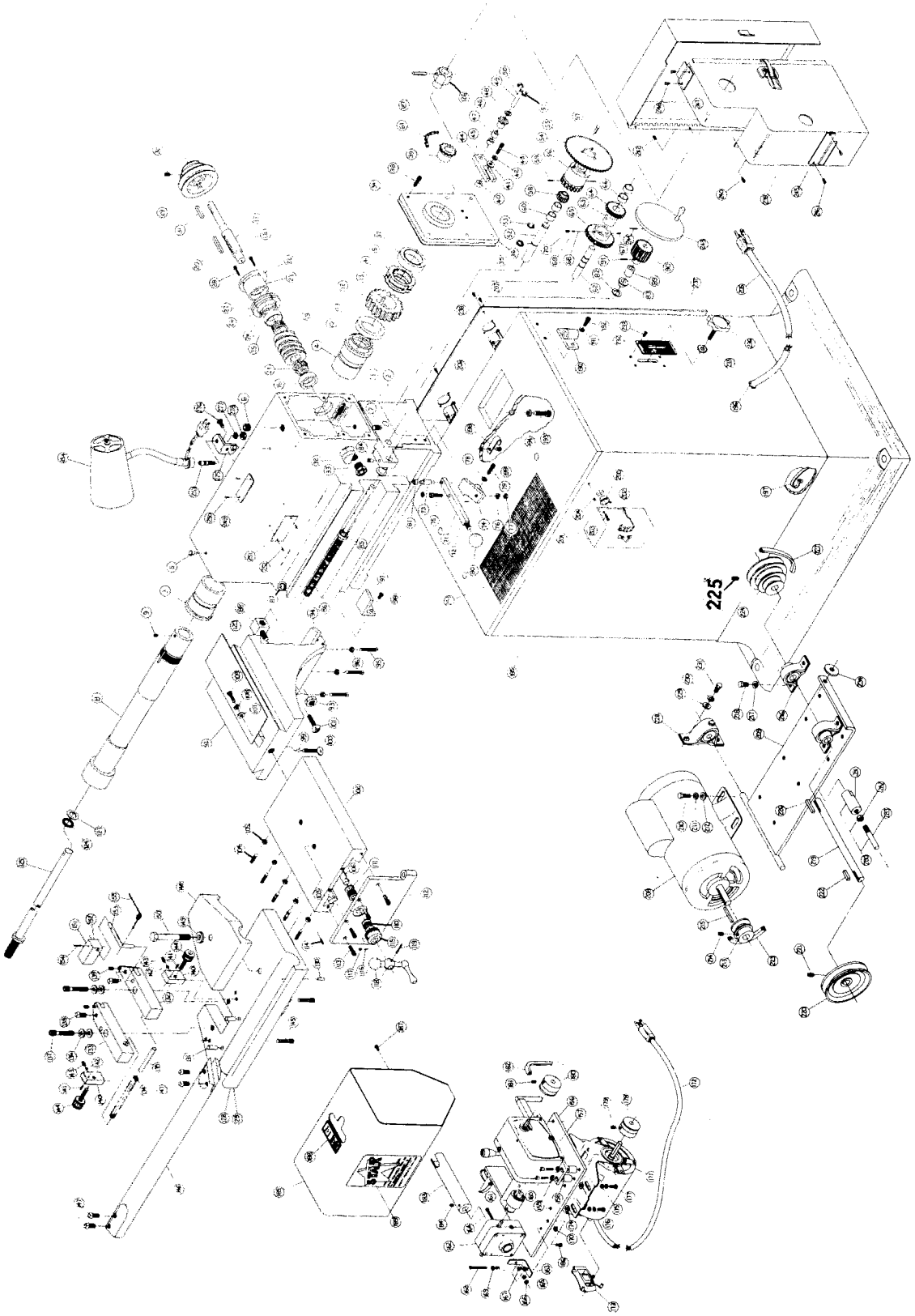

FIG 2-1 PARTS BREAKDOWN MODEL 1476

By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
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25			

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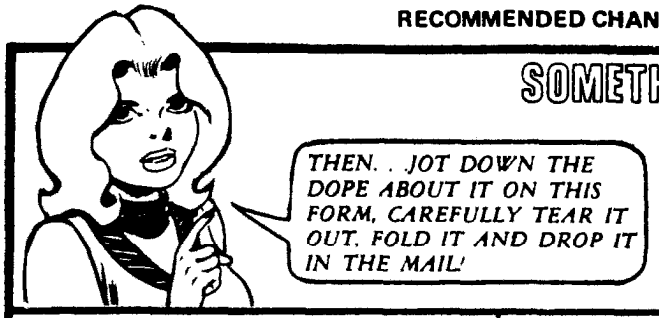

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